**Case Study 2**

Making Sense of Technology

Teaching Resources

**Summary**

This unit is focused on getting the students more excited about understanding the technologies that drive their digital (and non-digital) lives. This unit also provides a safe space for students to talk through technologies and algorithms that they don’t understand, and do a bit of research to try to understand them more. The unit involves two assignments: (1) A mini-presentation on a technology that they interact with that they want to understand better (2) A coding assignment to help them code an algorithm that they might have unknowingly interacted with! The coding assignment has been adapted from Evan Peck’s Moogle hiring algorithm assignment to work with a jupyter notebook. The last part of the unit should include Moogle part two, going through all of the functions that the student wrote from part one, while walking the students through each of the edge cases that could result in harmful algorithmic output. The students will benefit from a class discussion or a reflection write-up after part 2 of the assignment.

**CS Topics That Are Covered in This Unit**

1. Data types (lists, strings, integers, booleans)
2. Numerical comparisons (< > <= >= ==)
3. Functions + returning
4. Calling and testing functions
5. Summation / calculating an average
6. For loops, range function

**Topics That Are Covered in This Unit**

1. Researching algorithms
2. Recommender systems
3. What you wish you knew about technology / algorithms online
4. Hiring algorithms
5. Automating human decision making
6. Ethical speculation for algorithm design
7. Thinking through edge cases / unintended consequences of unexpected data input

**Resources (Reading / Watching To Assign the Students)**

1. [The Science Behind Spotify's Discover Weekly](https://www.youtube.com/watch?v=N_U4tEh9p_8)
2. [How Algorithms are Controlling Your Life](https://www.vox.com/technology/2018/10/1/17882340/how-algorithms-control-your-life-hannah-fry)

**Discussion Questions**

1. What algorithms do you interact with every day?
2. What algorithms have you always wished you understood?
3. What fuels algorithms online?
4. In what ways could you “fool” an algorithm that you interact with?